REMARKS

The Applicant appreciates the Examiner's careful examination of this case. Reconsideration and re-examination are respectfully requested in view of the instant remarks.

With regard to paragraph 1 of the Office Action, the Applicant agrees that claims 1 – 8 of the application are pending.

With regard to paragraph 2 of the Office Action, the Applicant is obliged to the Examiner for acknowledging receipt of the Information Disclosure Statement, and for considering the patents and papers disclosed.

The information provided by the Examiner in paragraphs 3 and 4 of the Office Action has been noted.

In paragraph 5 of the Office Action, the Examiner rejects claims 1 and 3 under 35 U.S.C. 103(a) as being unpatentable over Turner et al (U.S. Patent No. 6,437,759) in view of Larlham et al (GB Patent No. 984,816) and further in view of Covannon et al (U.S. Patent No. 6,543,839). The Examiner's reasoning is given in more detail in paragraph 5.1 of the Office Action.

Paragraph 5.1 of the Office Action states

> "Turner et al. teaches vehicle simulator having a head-up display....."

Turner et al does teach a simulator having a head-up display and it is indeed the aim of Turner et al to teach such a display, see (col. 2, lines 52 – 54) which states:

"It is therefore an object of the present invention to provide an improved head-up simulator that better simulates the real HUD system in an economical way"

As stated in previous correspondence, the Turner et al invention does not specifically include a head-up display. Turner et al does disclose a head position and orientation system mounted on the head or headwear of the operator. The information from this head position and orientation system is used in association with the symbology (46) displayed on the simulated head-up display, see Turner et al col. 3, lines 58 – 61 which states:

"The symbology 46 is generated as a function of the position and/or angular orientation signals provided by the tracking apparatus 50".

Thus Turner et al does disclose the use of a head positioning system used in conjunction with a head-up display.

The Examiner continues to state that Turner et al further discloses:

".....a simulator host computer that receives information from controls of the vehicle and sends information to the controls and to instruments of the vehicle when the vehicle is in a simulation mode (col. 3, Lines 51 – 56)".

Turner et al actually discloses in col. 3, lines 51 – 56 the following:

"The simulator of the preferred embodiment includes a host computer 53 which receives data from the simulator and processes the data to continually define the changing simulated situational environment, e.g., the background landscape, targets, and any other objects that exist in the simulated situation."

Turner et al does not disclose a simulator host computer receiving information from the vehicle, but in fact from the simulator itself. This is because Turner et al only discloses a simulated vehicle cockpit, not a real world vehicle, i.e. a real aircraft. The Applicant's claim 1 requires a real-world vehicle, see Applicant's claim 1, paragraph (i). A real world vehicle does not need to have any additional equipment installed or added to it in order for the real world vehicle to function in each of its modes of operation.

On page 4 of the Office Action, the Examiner agrees that Turner et al does not expressly teach a real world vehicle whose instruments and controls are dual mode. The Examiner however states that Larlham et al teaches this. However, the vehicle used by Larlham et al is not dual-mode, allowing controls and instruments to be switched between normal and simulated operation.

Larlham et al states at page 1, lines 53 – 61 as follows:

"In the preferred form, control signal information for controlling the illusion apparatus is derived in part directly from the movements of

the vehicle controls made by the pupil and in part from an instructor's control unit having controls operable by a human instructor keeping the pupil's actions under observation".

The above clearly states that additional control means for the simulator is supplied by an instructor via an instructor's control box. Therefore the driver does not fully supply all controls to the simulator.

Larlham et al goes on to state at page 2, lines 10 – 13 as follows:

".....a motor car 11 is run up on to a pair of ramps 12 and driven forward until its front wheels 13 rest on a pair of shoes 14, 15".

.....and continues at page 2, lines 19 – 23 as follows:

"The offside shoe 15 has an arm 17 for connection of a mechanical take-off sheathed cable 18 transmitting steering angle to the visual illusion apparatus 19".

Larlham et al also states at page 2, lines 113 – 117 that:

"To derive from the pupil's movements of the car pedals the necessary signals for control of the equipment, a pedal board 42 is laid on the floor or footboard of the car 11 in the region of the pedals."

Larlham et al also states at page 3, lines 45 – 48 that:

"The arms of the pedal board can, if desired, be made adjustable to suit pedal arrangements in different cars....."

And Larlham et al also states at page 3, lines 52 – 56 that:

"A speedometer 40, placed in the car 1 where both the pupil driver and the instructor can see it, is driven by a mechanical sheathed cable drive 41 from the simulated gearbox to show simulated speed".

And Larlham et al also states at page 3, line 63 –67 :

"The simulated gear box has four incremental ratios of drive speed from the electric motor to the illusion apparatus 19 to represent the four forward speeds of a conventional car gearbox;....."

And Larlham et al also states at page 3, lines 78 – 82 that:

"All these instructor's box controls are manipulated by the instructor to match the operations of the actual car controls that he observes the pupil driver to be effecting."

The above quoted passages from Larlham et al clearly show that the invention of Larlham et al does not disclose the Applicant's claim 1 feature (i) of a real world vehicle whose controls and instruments are dual-mode such that they can be switched between normal operation and simulated operation.

In the invention disclosed by Larlham et al, the car when used in simulation mode requires (i) the addition of hardware in the form of the shoes to take the wheels and translate steering control, (ii) the pedal board needed to convert the pedal signals into information which can be interpreted by the simulator, (iii) addition of another speedometer to feed back information to the pupil and instructor, and (iv) information to be input manually by the instructor into the instructors box, which is also an addition to the car in order operate the simulator. All of this additional equipment and information inputs must be added to those of the car which are necessary to the operation of the simulator. Therefore the car has essentially single mode controls and instruments which must be adapted and supplemented by additional equipment to facilitate use of the vehicle in the simulator.

The Examiner goes on at the bottom of page 4 of the Office Action to state that Turner et al does not expressly teach the Applicant's claim 1 feature (ii) of a retro-reflecting screen, and the Applicant's claim 1 feature (iii) of a head mounted image projector. The Examiner states that these two features are disclosed by Covannon et al.

The Examiner quotes Covannon et al (col. 1 lines 6 – 8, col. 2, lines 23 – 24, col. 1, lines 8 – 9, Figure 8, col. 7, line 67 – col. 8 line 16) as disclosing a retro-reflecting screen which is deployed around the outside windows of a control area of the vehicle, which control area is for a person operating the simulator, and an image projector for being mounted on a head or headwear of the operator. It is respectfully noted that Covannon et al does not mention the

use of a head mounted projector and retro-reflecting screen in any application which includes a simulator or a vehicle, and in particular Covannon et al does not teach the use of a retro-reflecting screen deployed around the outside windows of a control area of a vehicle.

In view of the above, it will be seen that modifying Turner et al in the light of Larlham et al and Covennon et al will not arrive at the Applicant's invention as defined in the Applicant's claim 1. As stated above, Turner et al, Larlham et al and Covennon et al do not factually disclose the elements of the invention as argued by the Examiner.

In paragraph 5.2 and 5.3 of the Office Action, the Examiner rejects claims 2 and 3 over a combination of Turner et al, Larlham et al and Covannon et al. Claims 2 and 3 include all of the features of the Applicant's claim 1, and claim 1 is believed to be allowable for the above stated reasons.

In paragraph 6 of the Office Action, the Examiner rejects the Applicant's claim 5 as unpatentable over Turner et al, Larlham et al, Covannon et al and Larussa (U.S. Patent No. 6,163,408). Claim 5 includes all of the features of the Applicant's claim 1, and claim 1 is believed to be allowable for the above stated reasons. In addition, it is respectfully noted that the need to reject claim 5 over a combination of no less than four prior patents is an indication that claim 5 is inventive.

In paragraph 7 of the Office Action, the Examiner rejects claim 6 as unpatentable over Turner et al, Larlham et al, Covannon et al and Streid (U.S. Patent No. 6,196,845). Claim 6 includes all of the features of the Applicant's

claim 1, and claim 1 is believed to be allowable for the above stated reasons. In addition, it is respectfully noted that the need to combine together no less than four prior patents is an indication that claim 6 is inventive.

In paragraph 8 of the Office Action, the Examiner rejects the Applicant's claim 7 as unpatentable over Turner et al, Larlham et al, Covannon et al and Shaffer et al (U.S. Patent No. 6,050,690). Claim 7 includes all of the features of the Applicant's claim 1, and claim 1 is believed to be allowable for the above stated reasons. In addition, it is respectfully noted that the rejection of claim 7 is based on a combination of no less than four prior patents which, in the Applicant's respectful submission, is an indication that claim 7 is inventive.

In paragraph 9 of the Office Action, the Examiner rejects claim 8 over a combination of Turner et al, Larlham et al, Covannon et al, Amery et al (U.S. Patent No. 6,152,739) and Blackham (U.S. Patent No. 6,735,015). Claim 8 includes all of the features of the Applicant's claim 1 and claim 1 is believed to be allowable for the above stated reasons. In addition, it is respectfully noted that the rejection of claim 8 is based on no less than five prior patents. It is respectfully submitted that the need to combine together five prior patents is a clear indication that claim 8 is inventive. It is also respectfully submitted that the Examiner's combination of no less than five prior patents is an indication that the Examiner is using hindsight in trying to show that the Applicant's invention as defined in claim 8 is obvious, this being in addition to the fact that in the Applicant's respectful submission, the Examiner has not correctly

stated what is disclosed in Turner et al, Larlham et al, Covannon et al.

With regard to paragraph 10 of the Office Action, the Applicant was obliged to the Examiner for kindly indicating that claim 4 would be allowable if rewritten in independent form. For the reasons expressed above, the Applicant respectfully believes that he is entitled to broader protection that is offered by claim 4. It is hoped that the Examiner will agree with this when the Examiner considers the above submissions.

With regard to paragraph 11 of the Office Action, the Applicant was much obliged to the Examiner for the detailed explanation of the Examiner's perception of the disclosure of Turner et al, Larlham et al, Covannon et al. The applicant has stated above where he respectfully disagrees with the Examiner's interpretation of the disclosure of Turner et al, Larlham et al, Covannon et al. In connection with paragraph 11.3 of the Office Action, the Applicant respectfully maintains his position that the need to combine together four or more patents in order to reject a claim on obviousness is a strong indication that the claim is novel, non-obvious, and inventive. The law prohibits the use of hindsight analysis. "One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention". See In re Fine, 837 F. 2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988).

The applicant respectfully submits that when a showing of obviousness requires the combination of four or five references, some hindsight analysis is manifest.

It is respectfully emphasised that in addition to the Applicant's views on the use of hindsight and ex-post facto reasoning, the Examiner's interpretation of the disclosure set out in the main three citations of Turner et al, Larlham et al, Covannon et al is believed to be incorrect for the reasons stated above.

Accordingly, it is respectfully submitted that this application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this **RESPONSE** is found to be **INCOMPLETE**, or if at any time it appears that a **TELEPHONE CONFERENCE** with Counsel would help advance prosecution, please telephone the undersigned or one of his associates, collect in Waltham, Massachusetts, at (781) 890-5678.

Respectfully submitted,

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